Amendment to Claims

This listing of Claims will replace all prior versions and listings of claims in this Application.

Listing of Claims

1. (CURRENTLY AMENDED) A method of making second generation halftone images lacking visible interference, comprising:

selecting an image which has been halftoned by forming original halftone dots, wherein each halftone dot includes at least one pixel therefor;

determining a number of tone levels required for each pixel of the selected halftoned image;

arranging the number of tone levels in a set of tone levels;

identifying a high-frequency halftone cell size;

scanning the selected halftoned image to produce a second generation multi-level halftoned image, which retains the original halftone dots and pixels therein;

reproducing, for each pixel in the second generation multi-level halftoned image, a pixel tone level;

selecting, from the set of tone levels, a tone level closest to the pixel tone level of each pixel in the second generation multi-level halftoned image to minimize noise generated during scanning without constructing a new halftone center;

arranging a dot growth pattern evenly across the second generation multi-level halftoned image.

2. (ORIGINAL) The method of claim 1 which further includes determining a sub-pixel level

difference.

3. (CURRENTLY AMENDED) The method of claim 2 wherein said growing includes growing the dot pattern evenly across the second generation multi-level image by setting the sub-pixel level difference to one.

4. (ORIGINAL) The method of claim 2 wherein said defining a sub-cell includes defining a cell to be a 4x4 pixel matrix, and defining a sub-cell to be a 2x2 pixel 2D matrix, having a sub-pixel level difference matrix values for each pixel in the cell and sub-cell.

5. (ORIGINAL) The method of claim 4 wherein said arranging includes scaling up the matrix values from zero to one, to zero to 255.

6. (ORIGINAL) The method of claim 1 wherein the number of tone levels is fifteen levels of gray plus white.

7. (ORIGINAL) The method of claim 1 wherein the cell size is 4x4 pixels.

8. (CURRENTLY AMENDED) A method of making second generation multi-level halftone images lacking visible interference, comprising:

selecting an image which has been halftoned by forming original halftone dots, wherein each halftone dot includes at least one pixel therefor;

determining a number of tone levels required for each pixel of the selected halftoned image;

arranging the number of tone levels in a set of tone levels;

identifying a high-frequency halftone cell size;

scanning the selected halftoned image to produce a second generation multi-level halftoned image, which retains the original halftone dots and pixels therein;

reproducing, for each pixel in the second generation multi-level halftoned image, a pixel tone level;

selecting, from the set of tone levels, a tone level closest to the pixel tone level of each pixel in the second generation multi-level halftoned image to minimize noise generated during scanning without constructing a new halftone center;

arranging a dot growth pattern to offset initial dot growth from the center of the halftone cell by defining sub-cells and growing the dot pattern relative to the sub-cell;

determining a sub-pixel level difference; and

growing a dot pattern evenly across the second generation multi-level halftoned image by setting the sub-pixel level difference to one while preserving halftone dot original amplitude.

9. (ORIGINAL) The method of claim 8 wherein the number of tone levels is fifteen levels of gray plus white.

10. (ORIGINAL) The method of claim 8 wherein the cell size is 4x4 pixels.

11. (ORIGINAL) The method of claim 8 wherein said defining a sub-cell includes defining a cell to be a 4x4 pixel matrix, and defining a sub-cell to be a 2x2 pixel 2D matrix, having a sub-pixel level difference matrix values for each pixel in the cell and sub-cell.

12. (ORIGINAL) The method of claim 11 wherein said arranging includes scaling up the matrix values from zero to one, to zero to 255.

13. (CURRENTLY AMENDED) A method of making second generation multi-level halftone images lacking visible interference, comprising:

selecting an image which has been halftoned by forming original halftone dots, wherein each halftone dot includes at least one pixel therefor;

determining a number of tone levels required for each pixel of the selected halftoned image;

arranging the number of tone levels in a set of tone levels;

identifying a high-frequency halftone cell size;

scanning the selected halftoned image to produce a second generation multi-level halftoned image, which retains the original halftone dots and pixels therein;

reproducing, for each pixel in the second generation multi-level halftoned image, a pixel tone level by setting multi-level thresholds;

selecting, from the set of tone levels, a tone level closest to the pixel tone level of each pixel in the second generation multi-level halftoned image to minimize noise generated during scanning without constructing a new halftone center;

arranging a dot growth pattern to offset initial dot growth from the center of the halftone cell by defining sub-cells and growing the dot pattern relative to the sub-cell;

determining a sub-pixel level difference; and

growing a dot pattern evenly across the second generation multi-level halftoned image by setting the sub-pixel level difference to one while preserving ~~dot~~ original dot amplitude.

14. (PREVIOUSLY PRESENTED) The method of claim 13 wherein the number of tone levels is fifteen levels of gray plus white.

15. (PREVIOUSLY PRESENTED) The method of claim 13 wherein the cell size is 4x4 pixels.

16. (PREVIOUSLY PRESENTED) The method of claim 13 wherein said defining a sub-cell includes defining a cell to be a 4x4 pixel matrix, and defining a sub-cell to be a 2x2 pixel 2D matrix, having a sub-pixel level difference matrix values for each pixel in the cell and sub-cell.

17. (PREVIOUSLY PRESENTED) The method of claim 16 wherein said arranging includes scaling up the matrix values from zero to one, to zero to 255.